SLOVENSKI STANDARD
SIST ISO 2247:1996

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Embalaǵa - Celovita, napolnjena transportna embalaǵa - Vibracijski preskus pri doloǰeni nizki frekvenci

Packaging -- Complete, filled transport packages -- Vibration test at fixed low frequency

Emballages -- Emballages d'expédition complets et pleins -- Essai de vibration à basse fréquence fixe

Ta slovenski standard je istoveten z: ISO 2247:1985

ICS:

55.180.40	Celovita, napolnjena transportna embalaža	Complete, filled transport packages

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International Standard ISO 2247

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION•МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ•ORGANISATION INTERNATIONALE DE NORMALISATION

Packaging — Complete, filled transport packages — Vibration test at fixed low frequency

Emballages — Emballages d'expédition complets et pleins — Essai de vibration à basse fréquence fixe

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 2247 was prepared by Technical Committee ISO/TC 122, *Packaging*.

This second edition cancels and replaces the first edition (ISO 2247-1972), which has been technically revised as follows:

— the specification of the vibration table has been modified (clause 4 "Apparatus");

— a new clause on "Package preparation" has been added;

— the values for the vibration frequency and resultant peak acceleration have been modified (clause 7 "Procedure").

Users should note that all International Standards undergo revision from time to time and that any reference made herein to any other International Standard implies its latest edition, unless otherwise stated.

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Packaging — Complete, filled transport packages — Vibration test at fixed low frequency

1 Scope and field of application

This International Standard specifies a method for carrying out a vibration test on a complete, filled transport package. This test may be used to assess the performance of a package in terms of its strength or the protection that it offers to its content when it is subjected to vibration. It may be performed either as a single test to investigate the effects of vibration or as part of a sequence of tests designed to measure the ability of a package to withstand a distribution system that includes a vibration hazard.

NOTE — Other methods of vibration testing of packages are being examined and will be considered for inclusion in this International Standard at a later date.

There are methods in use which reproduce the vibrating environment, but it would be desirable to have a method more closely representative of the environment, and if such a method were developed it would be scientifically preferable to the present procedure.

2 References

ISO 2206, *Packaging — Complete, filled transport packages — Identification of parts when testing.*

ISO 2233, *Packaging — Complete, filled transport packages — Conditioning for testing.*

ISO 2234, *Packaging — Complete, filled transport packages — Stacking tests using static load.*

3 Principle

Placing of the test package on a vibration table and vibration of the package. The atmospheric conditions, the duration of the test, the peak acceleration and the attitude of the package and its method of restraint are predetermined. When required, a load may be superimposed on the package to simulate conditions at the bottom of a stack.

4 Apparatus

Vibration table, of sufficient size, rigidity and mass-carrying capacity, supported on a mechanism that will maintain the surface horizontal during vibration. The difference in surface level between the table extremities shall not exceed 10 mm.

The table may be equipped with

a) low fences to restrict sideways and endways movement during testing;

b) high fences or other means of maintaining a superimposed load in position on the test package during testing;

c) means to simulate the method of restraining the package during transit.

In addition, the apparatus shall meet the requirements and tolerances of clause 7.

5 Package preparation

The test package shall normally be filled with its intended contents. However, simulated or dummy contents may be used, on condition that the dimensions and physical properties of such contents shall be as close as possible to those of the intended contents.

Ensure that the test package is closed normally, as if ready for distribution. If simulated or dummy contents are used, ensure that the normal method of closure is still employed.

6 Conditioning

The package shall be conditioned in accordance with one of the conditions described in ISO 2233.

7 Procedure

Whenever possible, the test shall be carried out in the same atmospheric conditions as used for conditioning where this is critical to the materials or application of the package. In other circumstances, the test shall be carried out in atmospheric conditions which are as near as practicable to those used for conditioning.

7.1 Place the test package in the predetermined attitude on the vibration table (see clause 4), with the centre of its lowest face or its centre of gravity as near as practicable within 10 mm of the centre of the table; if the package is not secured to the table it may be fenced. If a superimposed load is required, the loading procedure shall comply with ISO 2234.

7.2 Operate the table between 3 and 4,6 Hz for the predetermined period to give a peak acceleration in the range of 0,5 to 1,1 *g*. The movement shall be such that the vertical component is approximately sinusoidal; a rotary movement of the table is acceptable.

NOTE — If instrumentation is used to determine the vibration level, the accelerometer should be attached to the table near the package, but protected so that the test package will not come into contact with it. For testing at 1,1 *g*, in place of instrumentation, the proper frequency setting may be determined by starting the vibration of the table at a frequency of about 2 Hz, and steadily increasing the frequency until some portion of the package repeatedly leaves the table, to ensure that the package receives a continuing series of repetitive shocks.

8 Test report

The test report shall include the following particulars:

a) reference to this International Standard;

b) number of replicate packages tested;

c) full description of the package, including dimensions, structural and material specifications of the package and its fittings, cushioning, blocking, closure or reinforcing arrangements;

d) description of contents — if simulated or dummy contents were used, full details shall be given;

e) gross mass of package and mass of contents, in kilograms;

f) relative humidity, temperature and time of conditioning; temperature and relative humidity of test area at time of test; whether these values comply with the requirements of ISO 2233;

g) the attitude in which the package was tested, using the method of identification given in ISO 2206;

h) the duration of time of the test, the frequency of vibration and the peak acceleration achieved;

j) whether a superimposed load was used; if so, the mass, in kilograms, of the superimposed load and the period of time during which the package was under load;

k) the method of restraint, and whether low or high fences were used;

m) any deviations from the test method described in this International Standard;

n) a record of the result, with any observations which may assist in correct interpretation;

p) date of the test;

q) signature of tester.